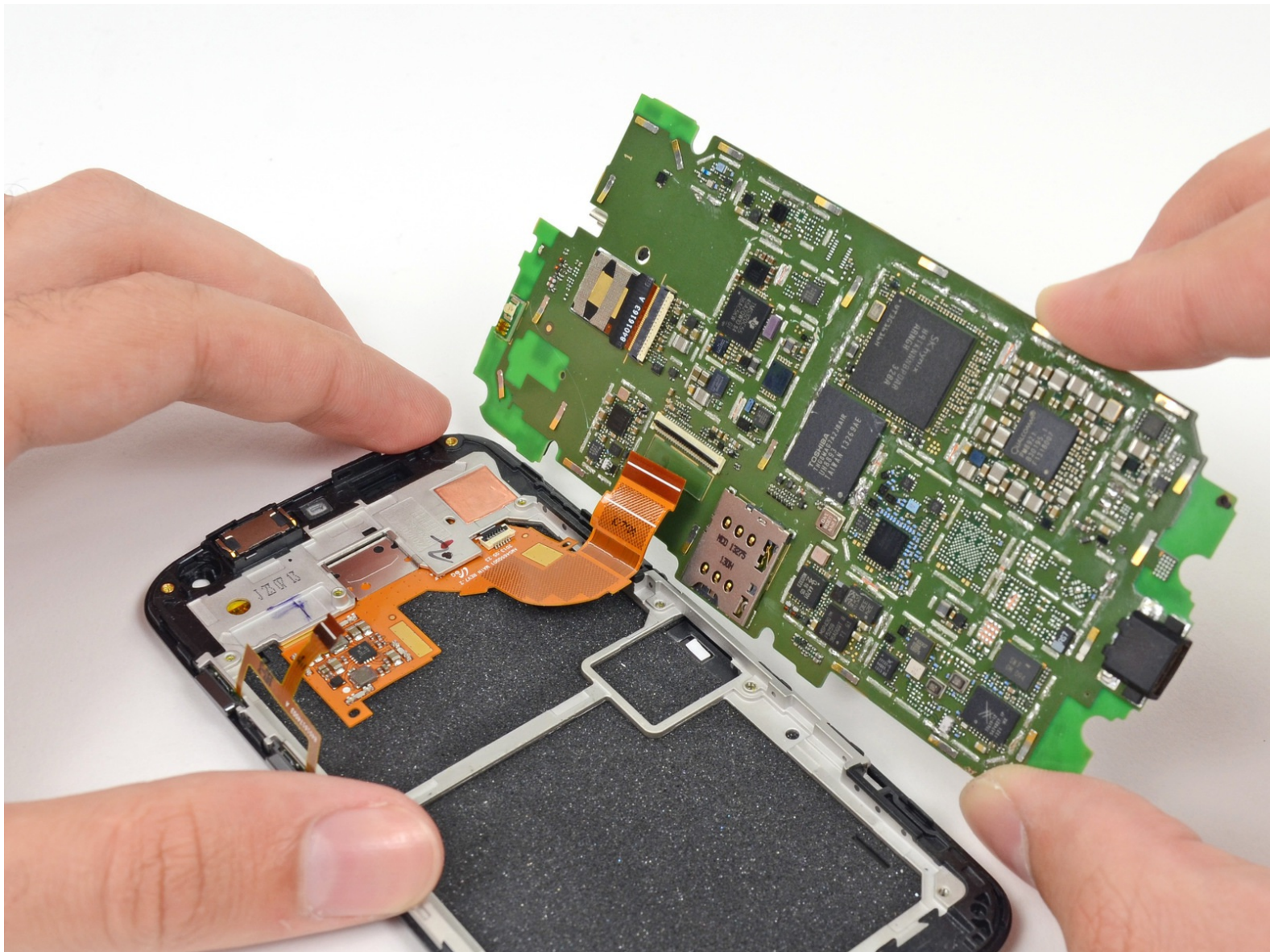




Motorola Moto X Motherboard Replacement

Replace the motherboard in a Motorola Moto X.

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INTRODUCTION

Use this guide to replace the motherboard in your Motorola Moto X.

TOOLS:

- [SIM Card Eject Tool](#) (1)
 - [iOpener](#) (1)
 - [iFixit Opening Tools](#) (1)
 - [Spudger](#) (1)
 - [T3 Torx Screwdriver](#) (1)
 - [Tweezers](#) (1)
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Step 1 — SIM Card



- Insert the SIM card eject tool into the hole in the side of the SIM card tray and push to eject the tray.
 - Remove the SIM card tray.
- i** If the SIM card does not fall free from the tray on its own, simply remove it with your fingers.

Step 2 — Back Cover Assembly



- i** In the following steps you will be releasing the clips holding the phone's cases together. However, the back case is also secured with an adhesive pad. After separating the clips you will use an iOpener to allow the case to fully open. **Do not** attempt to fully open the phone before loosening the adhesive.
- Insert a plastic opening tool into the seam between the front and rear covers near the SIM card slot.
 - Slide the plastic opening tool along the seam toward the upper corner.

Step 3



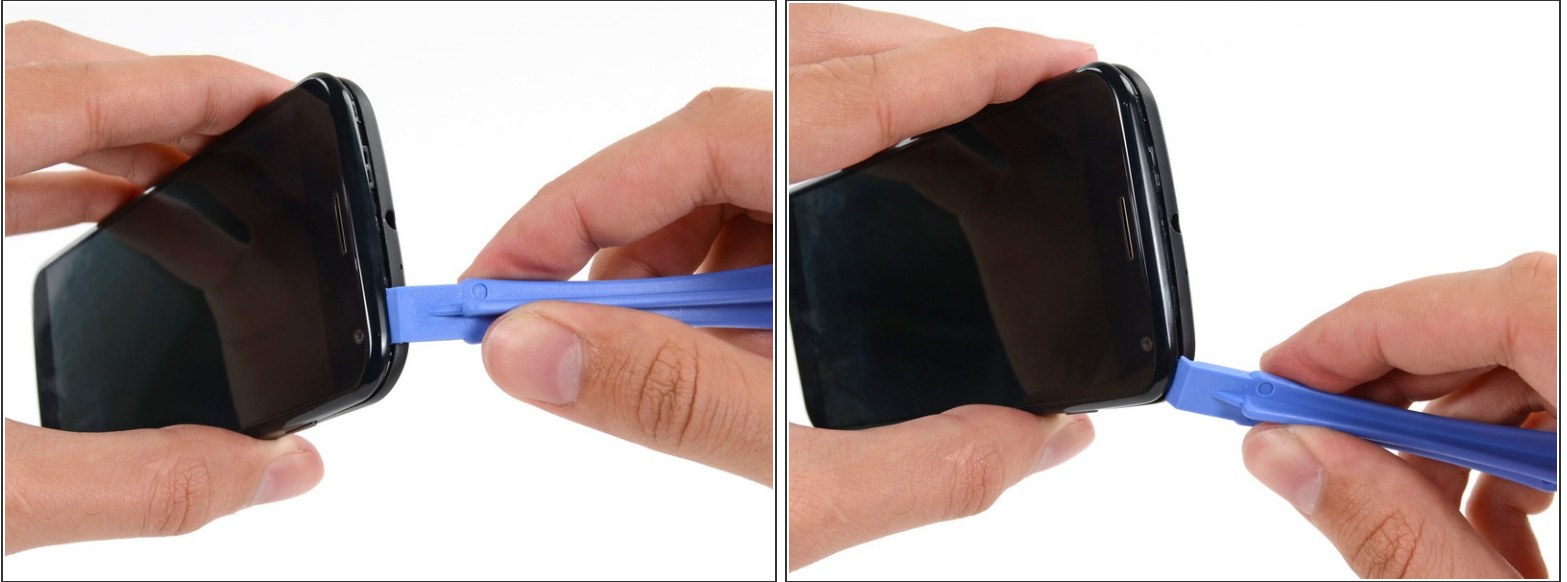
- Carefully slide the plastic opening tool around the corner, freeing it from clips.

Step 4



- Run the plastic opening tool along the seam nearest the headphone jack on the top of the phone.

Step 5




- Pry around the top right corner of the phone between the two covers.

Step 6



- Carefully slide the opening tool along the button side of the phone.

 The plastic on the front cover is thinner here and the buttons may move around; go slowly to avoid damaging the buttons or the front cover.

Step 7



- Insert a plastic opening tool into the seam just below the volume rocker to widen the gap.

Step 8



- Continue prying to the lower corner of the phone.

Step 9



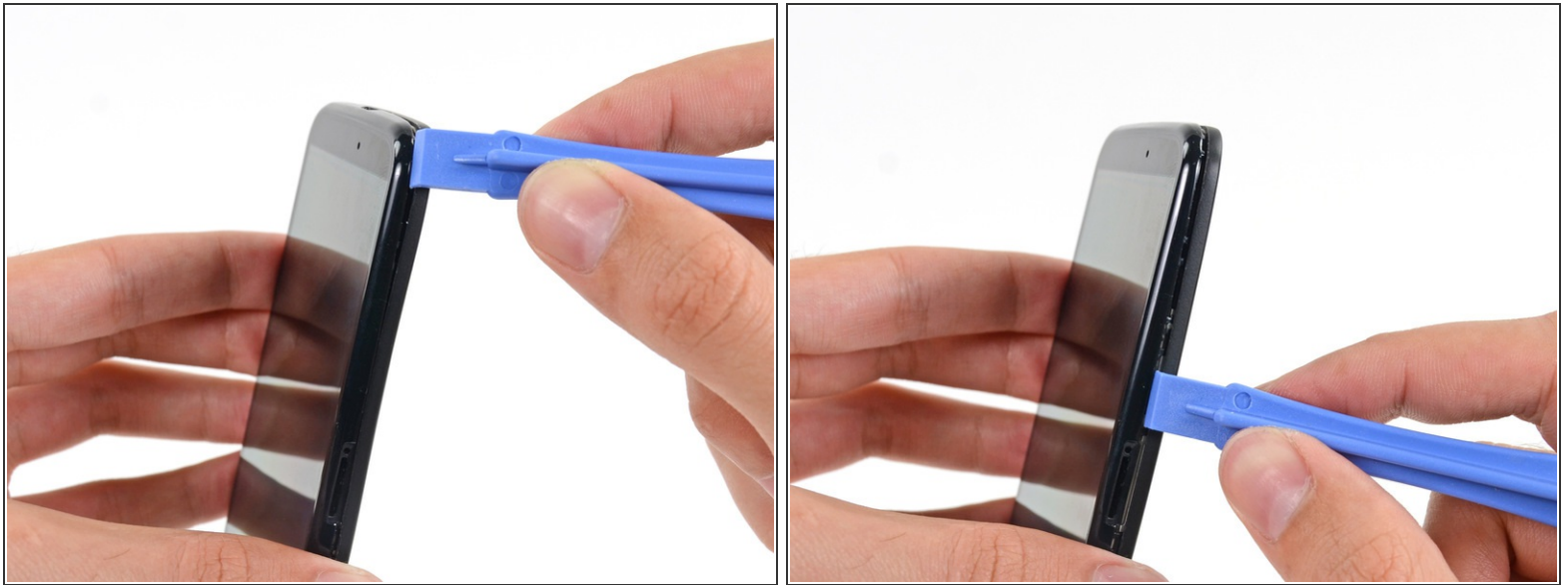
- Carefully pry from the corner to the edge of the USB port.

Step 10



- Insert the plastic opening tool at the other end of the USB port and slide around the corner.

Step 11





- Continue separating clips around the corner and along the length of the phone.

i Once you are certain the clips have all been separated, use the following two steps to prepare your iOpener.

Step 12



-  We recommend that you clean your microwave before proceeding, as any nasty gunk on the bottom may end up stuck to the iOpener.
- Place the iOpener in the center of the microwave.
-  For carousel microwaves: Make sure the plate spins freely. If your iOpener gets stuck, it may overheat and burn.

Step 13



- Heat the iOpener for thirty seconds.
- Throughout the repair procedure, as the iOpener cools, reheat it in the microwave for an additional thirty seconds at a time.

- ⚠ Be careful not to overheat the iOpener during the repair. Overheating may cause the iOpener to burst.
- ⚠ Never touch the iOpener if it appears swollen.
- ⚠ Always wait at least three minutes before reheating the iOpener.

Step 14



- Remove the iOpener from the microwave, holding it by one of the two flat ends to avoid the hot center.
- ⚠ The iOpener will be very hot, so be careful when handling it. Use an oven mitt if necessary.




Step 15



- Lay the iOpener over the phone to loosen the adhesive securing the back cover. Let the bag sit on the device for approximately 90 seconds before attempting to remove the cover.

Step 16



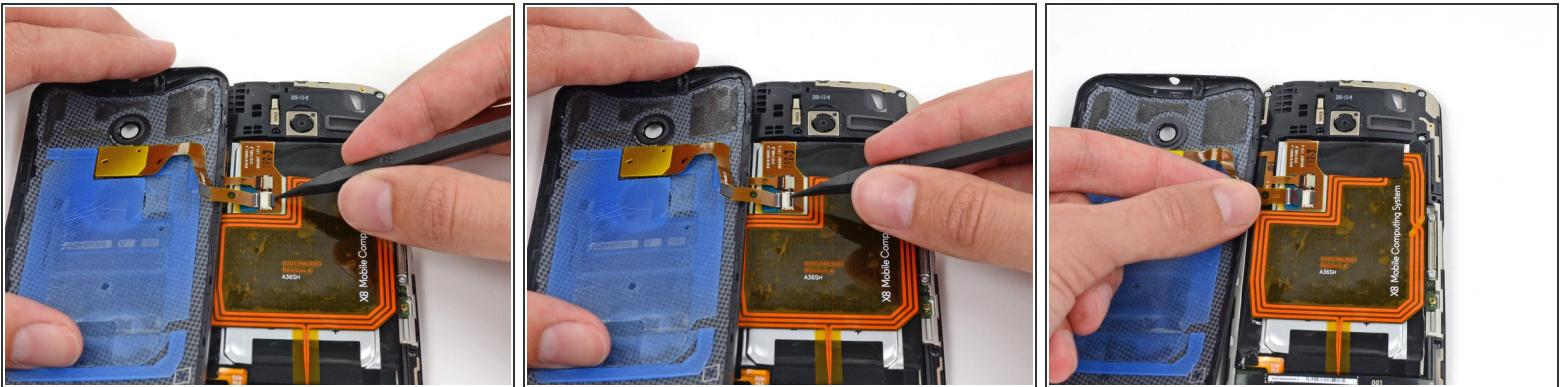
- Starting from the SIM slot side, carefully peel the back cover off of the phone.
-  The back cover is very flexible, but you don't want to damage any internal components by being too hasty.
-  **Do not** separate the back cover entirely; it is still connected to the phone by the camera flash cable.
-  The flash cable is attached on the power/volume button side of the phone.

Step 17



- Gently set the back cover down in a way that exposes the camera flash cable connector, but does not put strain on it.

Step 18



- Use the tip of a spudger to flip up the retaining flap on the flash cable ZIF connector.

⚠ Be sure to pry only on the flap itself, **not** on the connector.

- Pull the flash cable straight out of its socket.

Step 19



- Separate the back cover from the phone.

Step 20 — Lower Antenna Assembly



- Remove the four 3 mm T3 Torx screws securing the lower antenna assembly to the phone.

Step 21



- Use the flat end of a spudger to pry up the lower antenna assembly and free it from the phone.
- Remove the antenna assembly.

Step 22 — Battery



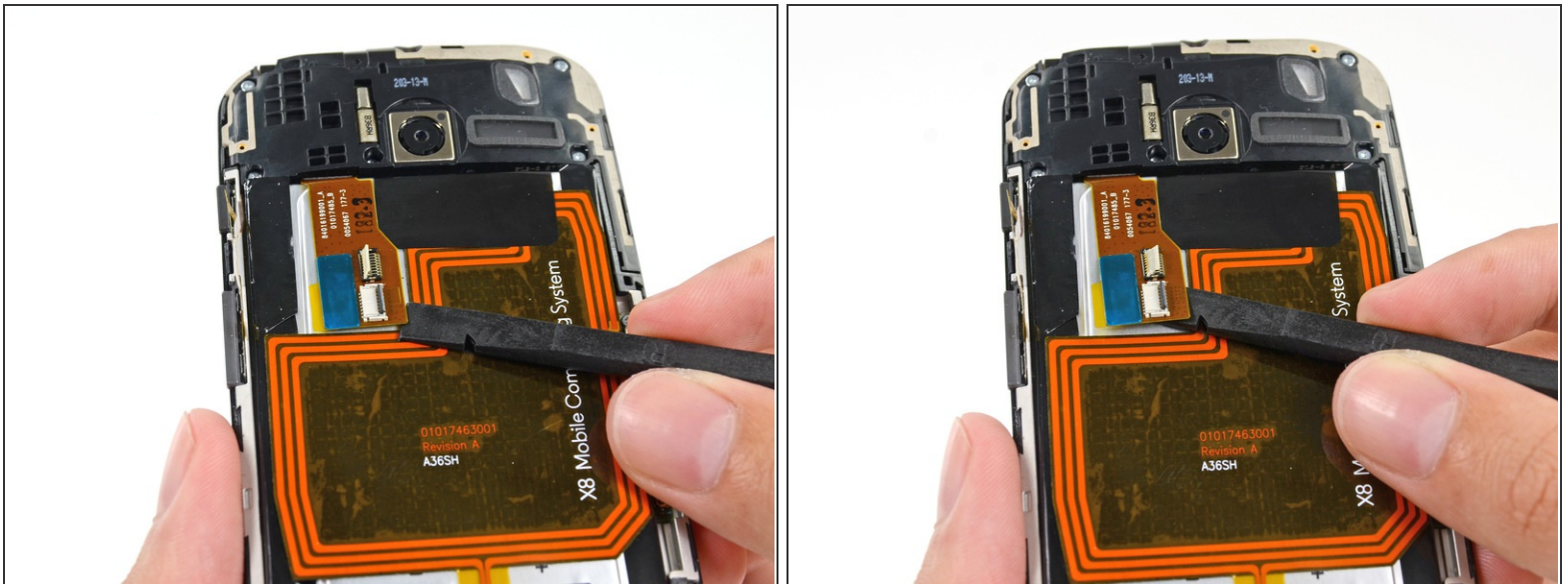
- Insert the tip of a spudger under the battery cable near the connector to lift it straight up from its socket.
- Use the flat end of a spudger to disconnect the NFC antenna cable connector.

Step 23



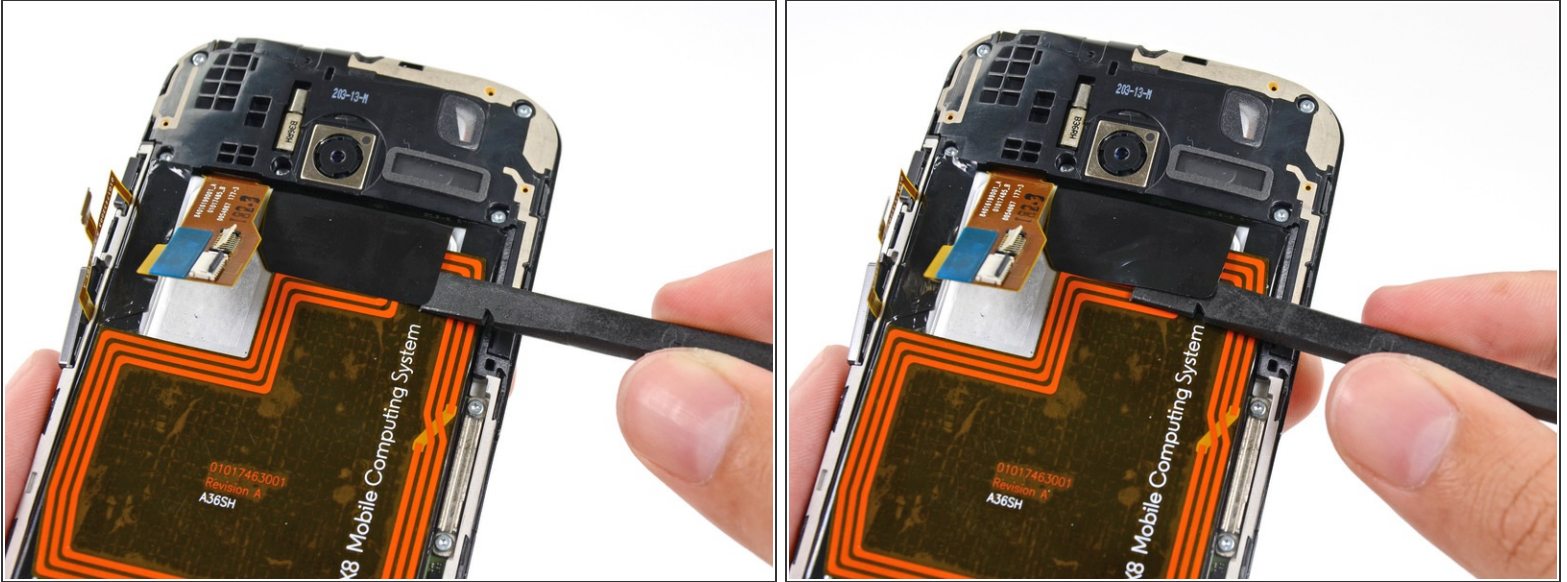
- Use the tip of a spudger to flip up the ZIF retaining flap from the button assembly cable connector.
- Slide the tip of the spudger under the button assembly cable near the connector to pull the cable straight out of its socket.

Step 24



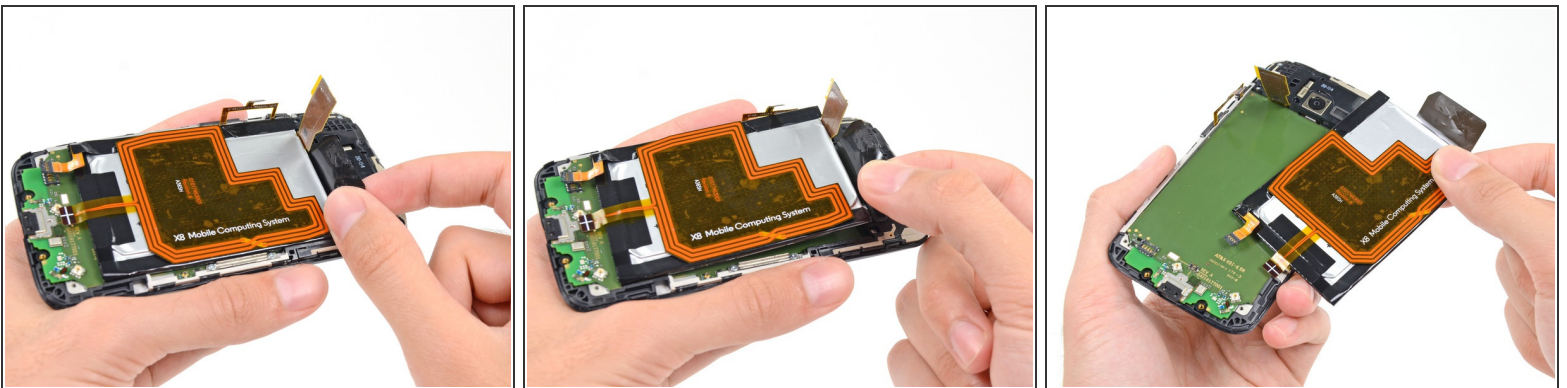
- Insert the flat end of a spudger under the interconnect cable to free it from the adhesive holding it to the battery.

Step 25



- Use the flat end of a spudger to peel the adhesive pull-tab off the top of battery.

Step 26



- Use the adhesive pull-tab to lift the battery from its recess.

⚠ The battery is secured to the motherboard with mild adhesive. Peel slowly, and be careful not to bend or puncture the battery.

- Remove the battery from the phone.

Step 27 — Motherboard Assembly



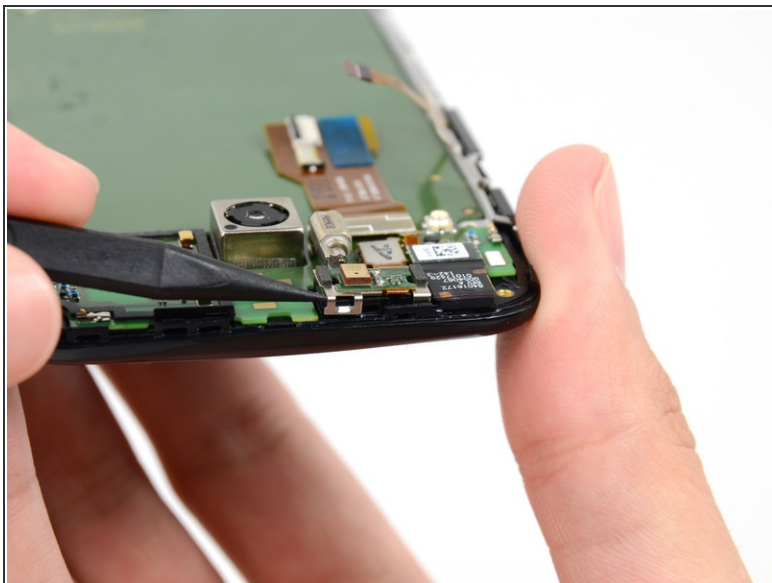
- Remove the five 3 mm T3 Torx screws from the headphone jack/speaker assembly.

Step 28



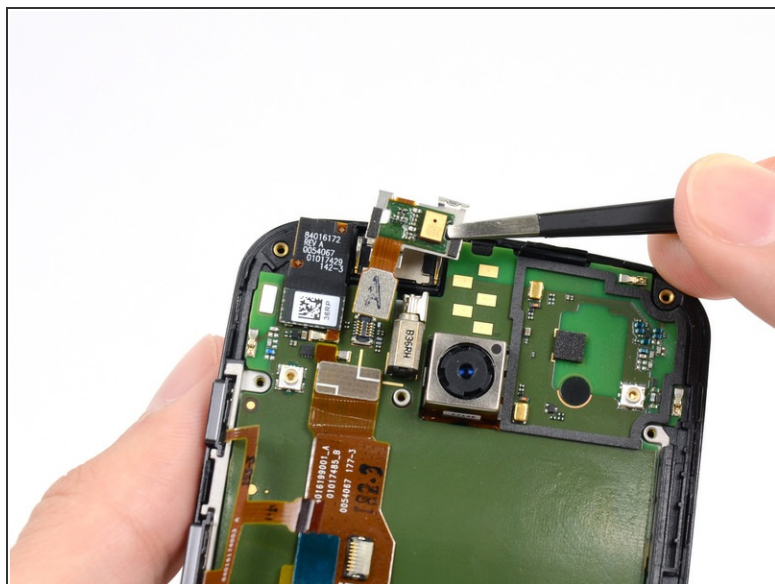
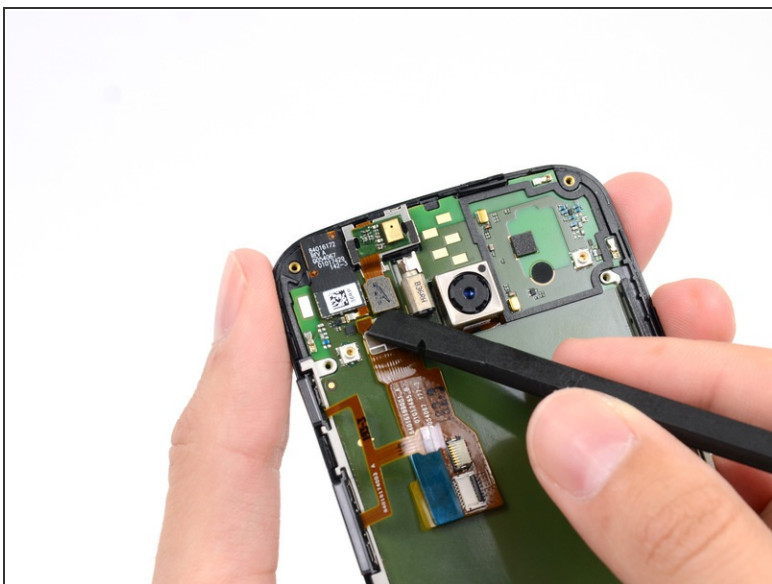
- Insert a spudger under the panhandle of the headphone jack/speaker assembly and pry it up from its recess.
- Remove the headphone jack/speaker assembly.

Step 29



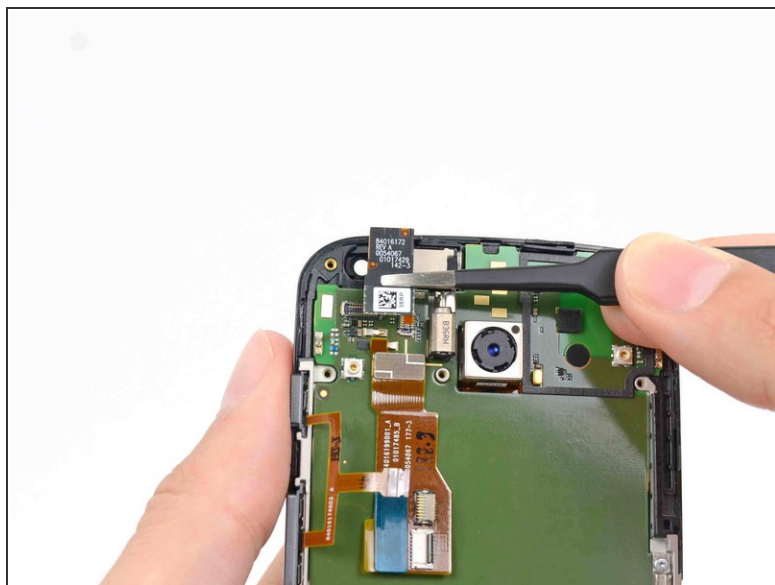
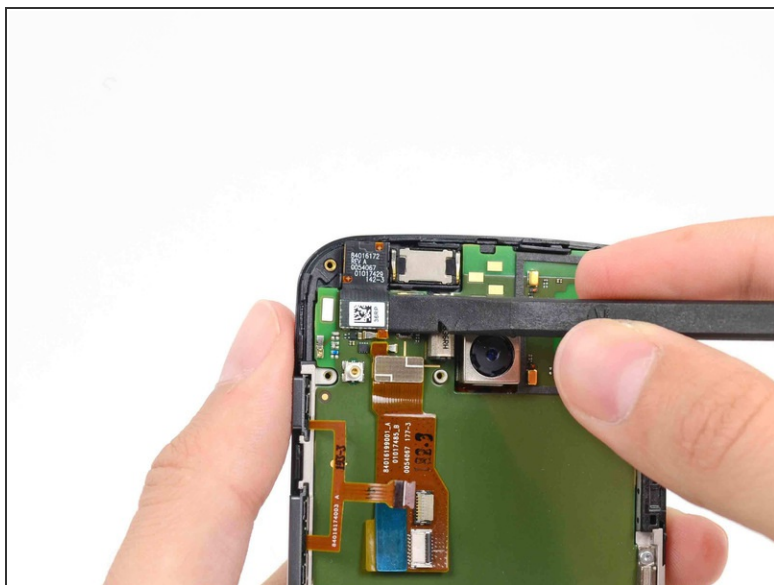
- Push the tip of a spudger under the microphone assembly clip to free it from the earpiece speaker.

Step 30



- Use the flat end of a spudger to free the microphone assembly cable connector.
- Use tweezers to remove the microphone assembly.

Step 31



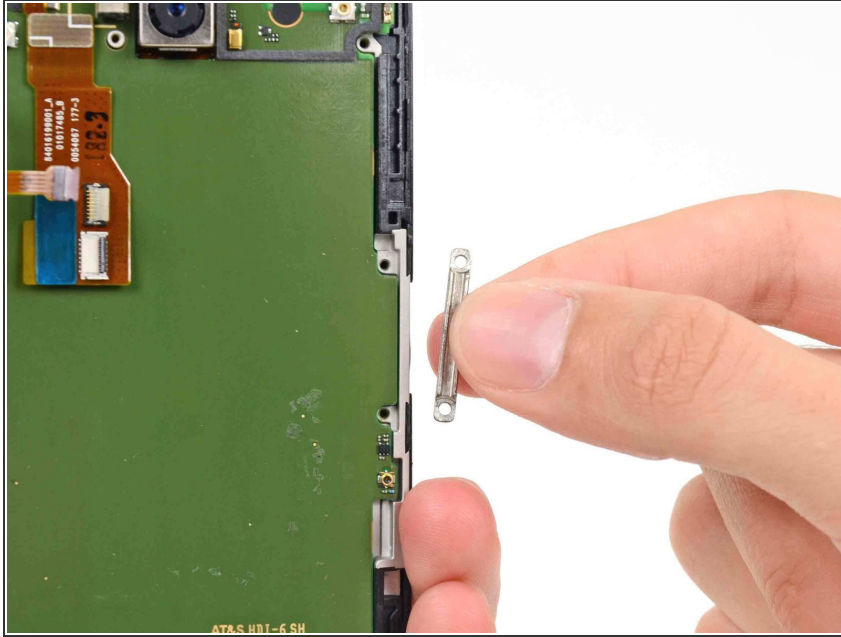
- Disconnect the front-facing camera cable connector.
- Remove the front-facing camera from its recess with a pair of tweezers.

Step 32



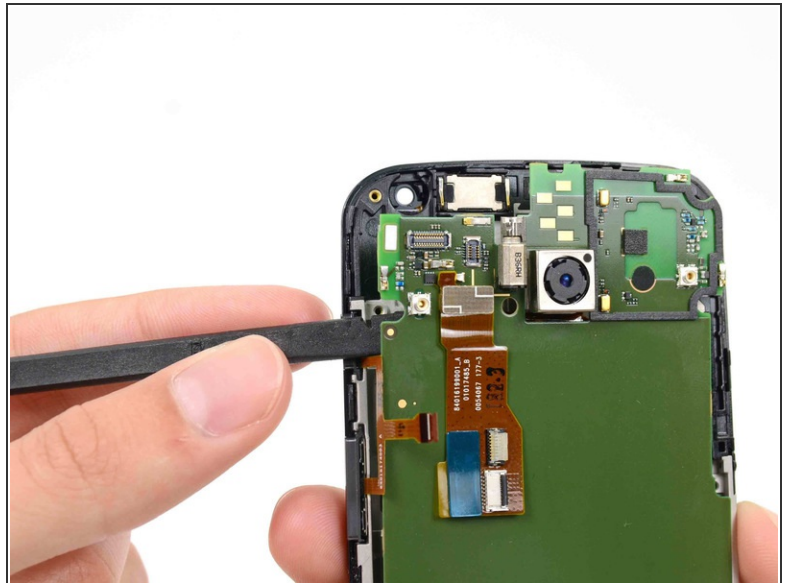
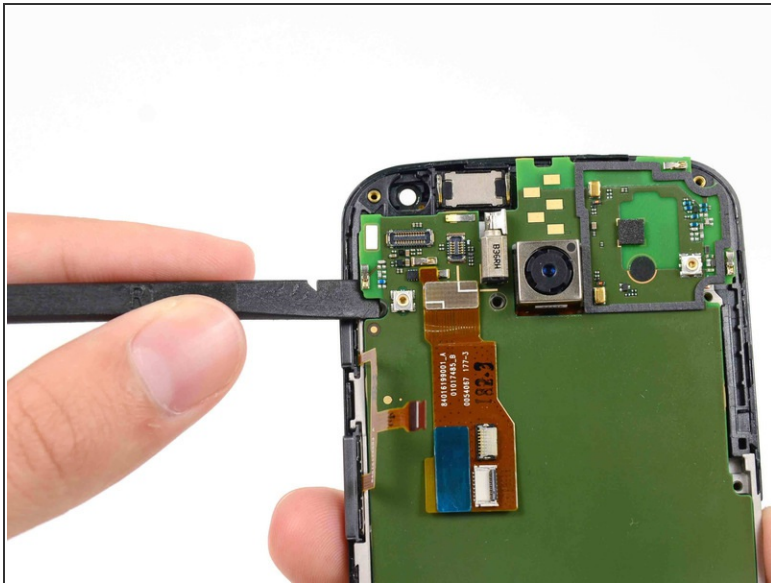
- Remove the final two 3 mm T3 Torx screws from the SIM slot bracket.

Step 33



- Remove the SIM slot bracket from the motherboard.

Step 34

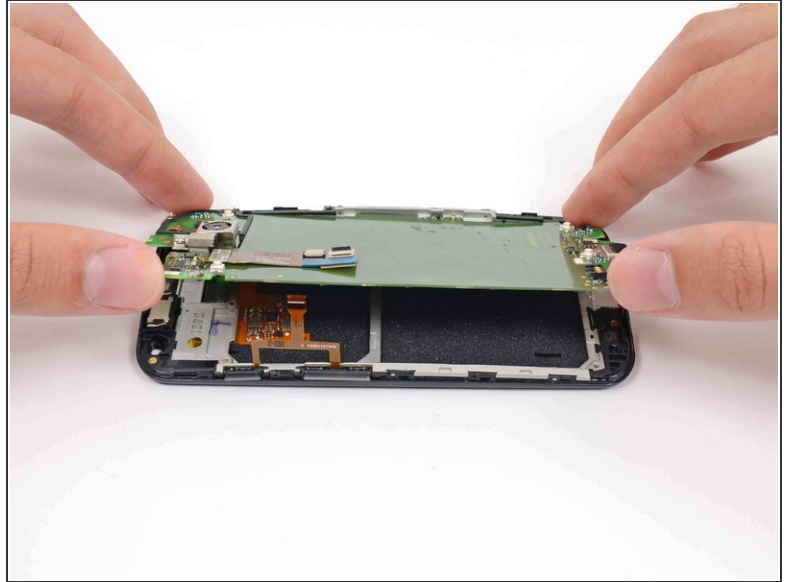
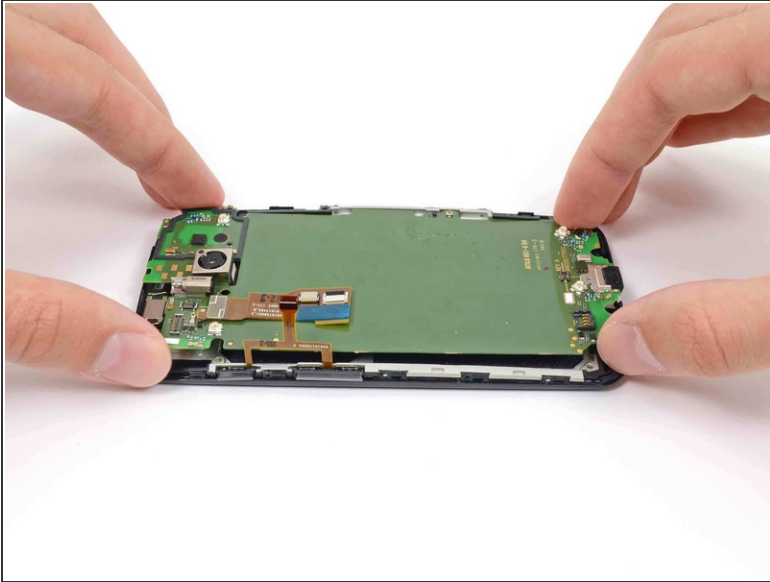


- Insert the flat end of a spudger under the motherboard above the button assembly cable, and pry it out of the phone.

⚠ Be careful not to snag any cables.

i The buttons may pop out of their recesses; take care not to lose them.

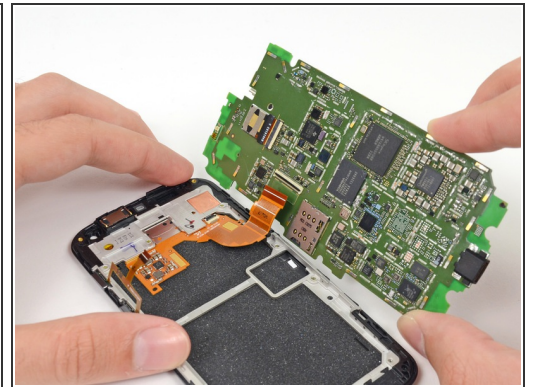
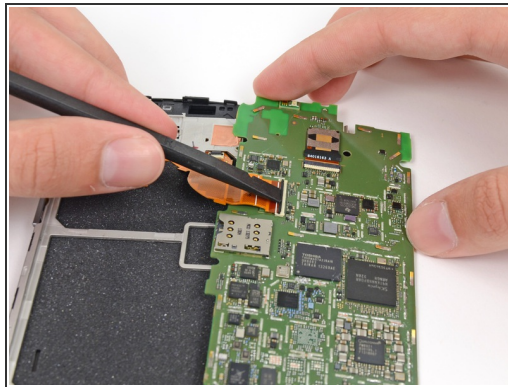
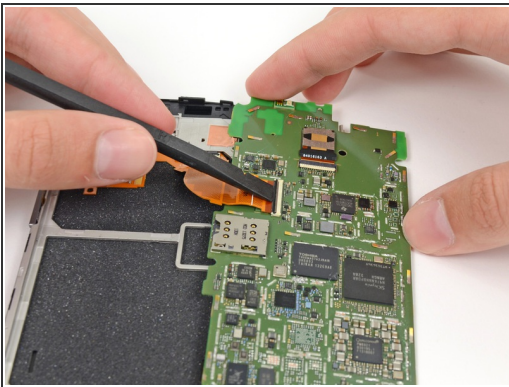
Step 35



- Gently lift the motherboard out of the phone, rotating it from the SIM slot edge of the phone.

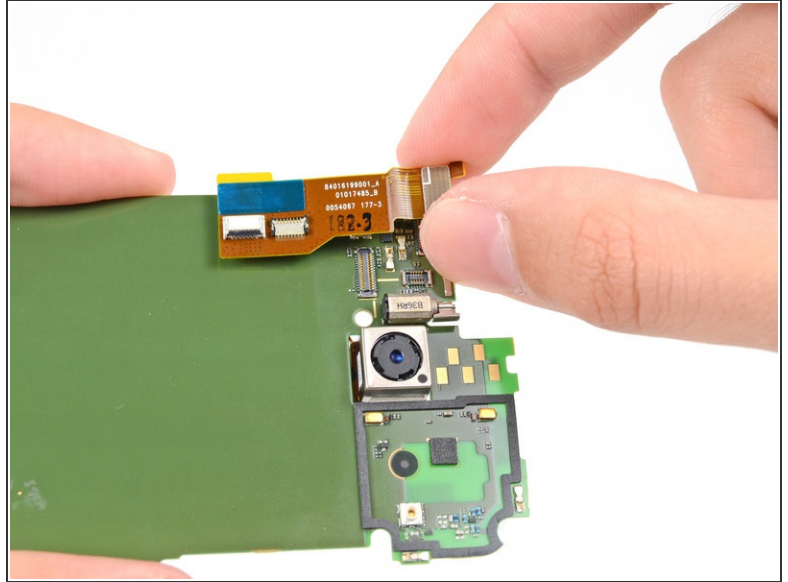
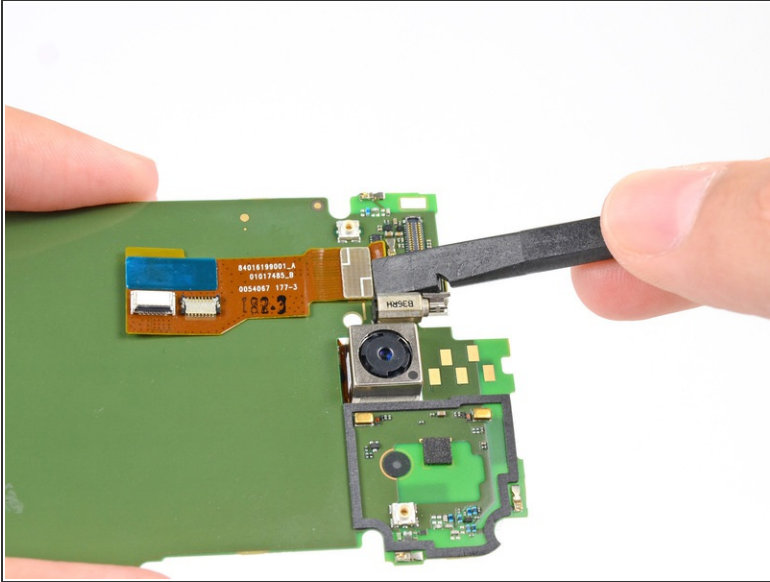
⚠ Do **not** attempt to separate the motherboard entirely; it is still connected to the display by the display cable.

Step 36



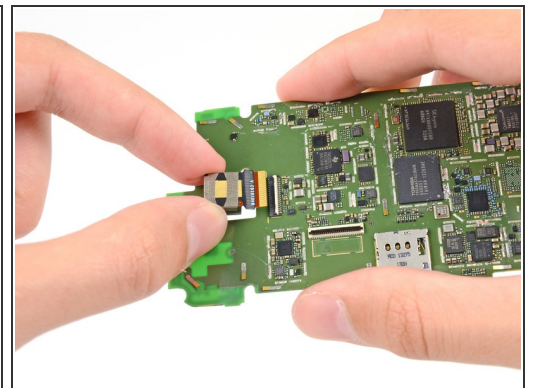
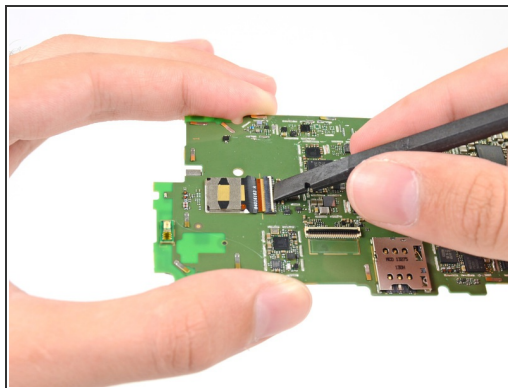
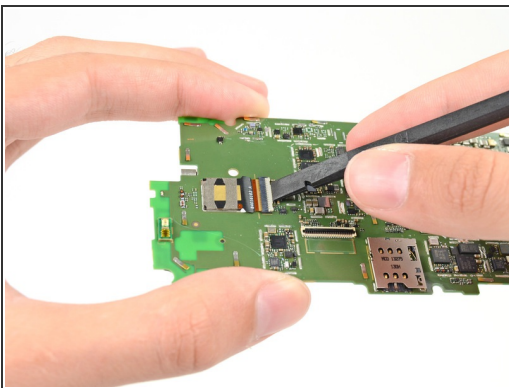
- ① Lay the motherboard down to allow access to the display cable connector.
- Use the flat end of a spudger to flip the retaining tab on the display cable ZIF connector.
- Carefully pull the display cable out of its connector as you remove the motherboard from the display assembly.

Step 37 — Motherboard



- Use the flat end of a spudger to free the interconnect cable connector.
- Remove the interconnect cable from the motherboard.

Step 38



- Use the flat end of a spudger to flip up the retaining tab on the front-facing camera ZIF cable connector.
- Remove the front-facing camera from the motherboard.

To reassemble your device, follow these instructions in reverse order.

